

WHAT IS CLAIMED IS:

1. A device for treating cardiac disease of a heart having a longitudinal axis from an apex to a base and having an upper portion and a lower portion divided by an A-V groove, said heart including a valvular annulus adjacent said A-V groove and ventricular lower extremities adjacent said apex, the device comprising:
 - a jacket of flexible material defining a volume between an open upper end and a lower end, wherein a multiaxial expansion of said flexible material is less than about 30 % when said material is exposed to a load up to about 5 pounds per inch (9 N/cm);
 - said jacket dimensioned for said apex of said heart to be inserted into said volume through said open upper end and for said jacket to be slipped over said heart, said jacket further dimensioned for said jacket to have a longitudinal dimension between said upper and lower ends sufficient for said jacket to constrain said lower portion with said jacket constraining said valvular annulus;
 - said jacket adapted to be secured to said heart with said jacket having portions disposed on opposite sides of the heart between said valvular annulus and said ventricular lower extremities; and
 - said jacket adapted to be adjusted on said heart to snugly conform to an external geometry of said heart and assume a maximum adjusted volume for said jacket to constrain circumferential expansion of said heart beyond said maximum adjusted volume during diastole and permit substantially unimpeded contraction of said heart during systole.
2. A device according to claim 1 wherein:
 - an expansion of said material along a first axis of said material is between about 30% and 40% when exposed to a uniaxial load between about 0.1 pounds per inch (0.2 N/cm) to about 0.5 pounds per inch (0.9 N/cm) with no lateral constraint;

- an expansion of said material along a second axis of said material is between about 20% and 30% when exposed to a uniaxial load between about 0.1 pounds per inch (0.2 N/cm) to about 0.5 pounds per inch (0.9 N/cm) with no lateral constraint; and
 - said material oriented for said second axis to extend circumferentially around said heart and wherein said first axis is perpendicular to second axis.
3. A device according to claim 1 wherein said jacket is open at said lower end.
 4. A device according to claim 1 wherein said jacket is closed at said lower end.
 5. A device according to claim 1 wherein said material comprises intertwined fibers.
 6. A device according to claim 5 wherein said material is a knit material.
 7. A device according to claim 6 wherein said material is a warp knit.
 8. A device according to claim 6 wherein said material is an Atlas knit.
 9. A device according to claim 5 wherein said material is a weave.
 10. A device according to claim 5 wherein said intertwined fibers comprise a plurality of longitudinally extending filaments.
 11. A device according to claim 1 wherein said material is selected from a group of polytetrafluoroethylene, expanded polytetrafluoroethylene, polypropylene, poly(ethylene terephthalate), titanium or stainless steel.

12. A device according to claim 1 wherein said material is formed of elongated fibers selected from a group of polytetrafluoroethylene, expanded polytetrafluoroethylene, polypropylene, poly(ethylene terephthalate), titanium or stainless steel.